

APPENDIX A (MODEL 1)

A-1 Descriptive Statistics

. summarize y_price x1_ncogl x2_llril x3_nplgl x4_llpgl cv1_ta cv2_cboe

Variable	Obs	Mean	Std. Dev.	Min	Max
y_price	330	2.86294	.6073349	1.506297	4.130676
x1_ncogl	330	.3685152	.25489	-.33	1.62
x2_llril	330	4.560455	.3674856	3.35	5.63
x3_nplgl	330	.3651515	.5654071	-1.11	1.34
x4_llpgl	330	.2353636	.2894655	-.3	1.45
cv1_ta	330	12.08827	.8644293	10.61	13.68
cv2_cboe	330	3.884482	.2881101	3.413126	4.722864

A-2 Correlation Table

. pwcorr y_price x1_ncogl x2_llril x3_nplgl x4_llpgl cv1_ta cv2_cboe, sig

	y_price	x1_ncogl	x2_llril	x3_nplgl	x4_llpgl	cv1_ta	cv2_cboe
y_price	1.0000						
x1_ncogl	-.0297	1.0000					
		0.5908					
x2_llril	0.3195	-.0203	1.0000				
		0.0000	0.7138				
x3_nplgl	-.02208	0.3178	-.06698	1.0000			
		0.0001	0.0000	0.0000			
x4_llpgl	-.02560	0.1305	-.01840	0.4315	1.0000		
		0.0000	0.0177	0.0008	0.0000		
cv1_ta	0.6580	0.1553	0.1325	-.01602	-.00829	1.0000	
		0.0000	0.0047	0.0160	0.0035	0.1329	
cv2_cboe	-.01239	-.00825	0.1509	-.00380	0.3588	0.0561	1.0000
		0.0244	0.1349	0.0060	0.4914	0.0000	0.3096

A-3 VIF Test

. vif

Variable	VIF	1/VIF
x3_nplgl	2.69	0.371946
x2_llril	2.06	0.485312
x4_llpgl	1.50	0.665314
x1_ncogl	1.29	0.775971
cv2_cboe	1.25	0.797599
cv1_ta	1.09	0.919239
Mean VIF	1.65	

A-4 Pooled OLS Model

. regress y_price x1_ncogl x2_llril x3_nplgl x4_llpgl cv1_ta cv2_cboe

Source	SS	df	MS	Number of obs	=	330
Model	71.1371036	6	11.8561839	F(6, 323)	=	76.26
Residual	50.2163993	323	.155468728	Prob > F	=	0.0000
				R-squared	=	0.5862
				Adj R-squared	=	0.5785
Total	121.353503	329	.368855632	Root MSE	=	.3943

y_price	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
x1_ncogl	-.5181107	.0968162	-5.35	0.000	-.7085807	-.3276406
x2_llril	.705317	.0849127	8.31	0.000	.5382652	.8723689
x3_nplgl	.3294179	.0630409	5.23	0.000	.2053954	.4534405
x4_llpgl	-.3407548	.092069	-3.70	0.000	-.5218853	-.1596242
cv1_ta	.4782428	.0262289	18.23	0.000	.4266418	.5298438
cv2_cboe	-.3678299	.0844837	-4.35	0.000	-.5340376	-.2016221
_cons	-4.555083	.5587047	-8.15	0.000	-5.654242	-3.455923

A-5 Random Effect Model

```
. xtreg y_price x1_ncogl x2_llril x3_nplgl x4_llpgl cv1_ta cv2_cboe, re
```

```
Random-effects GLS regression           Number of obs   =       330
Group variable: bankcount              Number of groups =        10

R-sq:                                Obs per group:
    within = 0.4341                      min =          33
    between = 0.4264                     avg =         33.0
    overall = 0.4133                     max =          33

Wald chi2(6) =       243.58
corr(u_i, X) = 0 (assumed)              Prob > chi2      =      0.0000
```

y_price	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
x1_ncogl	.1743227	.0431871	4.04	0.000	.0896776	.2589679
x2_llril	.3199076	.0525911	6.08	0.000	.2168308	.4229843
x3_nplgl	-.0214686	.0480126	-0.45	0.655	-.1155715	.0726343
x4_llpgl	-.3508823	.0403491	-8.70	0.000	-.4299652	-.2717995
cv1_ta	.1657042	.0678911	2.44	0.015	.0326401	.2987684
cv2_cboe	-.2130279	.0335131	-6.36	0.000	-.2787123	-.1473435
_cons	.2546241	.9302215	0.27	0.784	-1.568577	2.077825
sigma_u	.3200098					
sigma_e	.13945316					
rho	.84040515	(fraction of variance due to u_i)				

```
. estimates store re
```

A-6 Fixed Effect Model

```
. xtreg y_price x1_ncogl x2_llril x3_nplgl x4_llpgl cv1_ta cv2_cboe, fe
```

Fixed-effects (within) regression
Group variable: bankcount

Number of obs = 330
Number of groups = 10

R-sq:

within = 0.4384
between = 0.2006
overall = 0.2124

Obs per group:

min = 33
avg = 33.0
max = 33

corr(u_i, Xb) = 0.1498

F(6,314) = 40.86
Prob > F = 0.0000

y_price	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
x1_ncogl	.1645122	.0427061	3.85	0.000	.0804859	.2485384
x2_llril	.2738851	.0540056	5.07	0.000	.1676265	.3801437
x3_nplgl	-.0669916	.0499432	-1.34	0.181	-.1652574	.0312741
x4_llpgl	-.3250671	.0407117	-7.98	0.000	-.4051694	-.2449648
cv1_ta	.0390855	.0805067	0.49	0.628	-.1193154	.1974863
cv2_cboe	-.1962702	.0332959	-5.89	0.000	-.2617814	-.130759
_cons	1.944177	1.088479	1.79	0.075	-.1974566	4.08581
sigma_u	.55512015					
sigma_e	.13945316					
rho	.94063842	(fraction of variance due to u_i)				

F test that all u_i=0: F(9, 314) = 252.02 Prob > F = 0.0000

```
. estimates store fe
```

A-7 FGLS Model

```
. xtgls y_price x1_ncogl x2_llril x3_nplgl x4_llpgl cv1_ta cv2_cboe
```

Cross-sectional time-series FGLS regression

Coefficients: generalized least squares

Panels: homoskedastic

Correlation: no autocorrelation

Estimated covariances	=	1	Number of obs	=	330
Estimated autocorrelations	=	0	Number of groups	=	10
Estimated coefficients	=	7	Time periods	=	33
			Wald chi2(6)	=	467.48
Log likelihood	=	-157.5958	Prob > chi2	=	0.0000

y_price	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
x1_ncogl	-.5181107	.0957839	-5.41	0.000	-.7058436	-.3303777
x2_llril	.705317	.0840073	8.40	0.000	.5406657	.8699684
x3_nplgl	.3294179	.0623687	5.28	0.000	.2071776	.4516583
x4_llpgl	-.3407548	.0910872	-3.74	0.000	-.5192825	-.1622271
cv1_ta	.4782428	.0259492	18.43	0.000	.4273833	.5291023
cv2_cboe	-.3678299	.0835829	-4.40	0.000	-.5316492	-.2040105
_cons	-4.555083	.5527473	-8.24	0.000	-5.638447	-3.471718

A-8 Breusch and Pagan LM Test (Pooled OLS Model vs Random Effect Model)

A-9 Hausman Test (Fixed Effect Model vs Random Effect Model)

. hausman fe

	Coefficients		(b-B)	sqrt(diag(V_b-V_B))
	(b)	(B)	Difference	S.E.
	fe	.		
x1_ncogl	.1645122	.1743227	-.0098106	.
x2_llril	.2738851	.3199076	-.0460225	.0122791
x3_nplgl	-.0669916	-.0214686	-.0455231	.0137522
x4_llpgl	-.3250671	-.3508823	.0258152	.0054215
cv1_ta	.0390855	.1657042	-.1266188	.0432681
cv2_cboe	-.1962702	-.2130279	.0167577	.

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

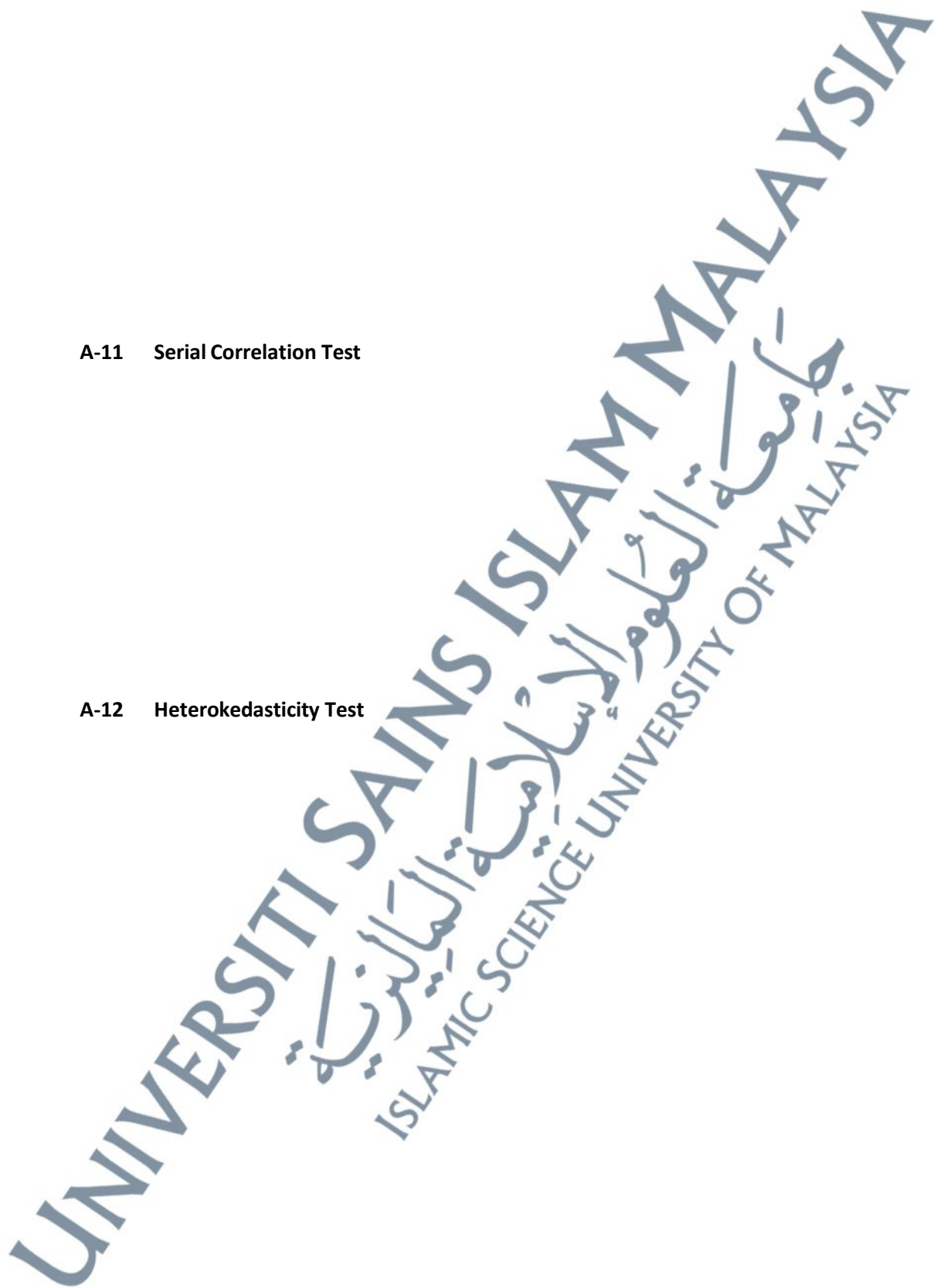
Test: Ho: difference in coefficients not systematic

chi2(6) = (b-B)'[(V_b-V_B)^(-1)](b-B)
 = 7.82
 Prob>chi2 = 0.2516
 (V_b-V_B is not positive definite)

A-10 Pesaran CD Test (Cross Sectional Dependency Test)

A-11 Serial Correlation Test

A-12 Heterokedasticity Test



APPENDIX B (MODEL 2)

B-1 Pooled OLS Model

```
. regress y_price x1_ncogl cv1_ta cv2_cboe
```

Source	SS	df	MS	Number of obs	=	330
				F(3, 326)	=	100.76
Model	58.3851403	3	19.4617134	Prob > F	=	0.0000
Residual	62.9683626	326	.193154486	R-squared	=	0.4811
				Adj R-squared	=	0.4765
Total	121.353503	329	.368855632	Root MSE	=	.43949

y_price	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
x1_ncogl	-.3610709	.0966426	-3.74	0.000	-.5511927	-.1709491
cv1_ta	.4857413	.0284443	17.08	0.000	.4297838	.5416987
cv2_cboe	-.369245	.0845949	-4.36	0.000	-.5356658	-.2028242
_cons	-1.441448	.4587729	-3.14	0.002	-2.343977	-.5389186

B-2 Random Effect Model

```
. xtreg y_price x1_ncogl cv1_ta cv2_cboe, re
```

Random-effects GLS regression
Group variable: bankcount

Number of obs = 330
Number of groups = 10

R-sq:

within = 0.1971
between = 0.5769
overall = 0.1661

Obs per group:

min = 33
avg = 33.0
max = 33

corr(u_i, X) = 0 (assumed)

Wald chi2(3) = 71.34
Prob > chi2 = 0.0000

y_price	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
x1_ncogl	.092686	.0501784	1.85	0.065	-.0056618	.1910338
cv1_ta	-.0919516	.0678015	-1.36	0.175	-.22484	.0409368
cv2_cboe	-.2388972	.0343096	-6.96	0.000	-.3061427	-.1716516
_cons	4.868311	.8034842	6.06	0.000	3.293511	6.443111
sigma_u	.43640699					
sigma_e	.16532696					
rho	.87449493	(fraction of variance due to u_i)				

B-3 Fixed Effect Model

Fixed-effects (within) regression
Group variable: bankcount

Number of obs = 330
Number of groups = 10

R-sq:

within = 0.2032
between = 0.5391
overall = 0.3311

Obs per group:

min = 33
avg = 33.0
max = 33

corr(u_i, Xb) = -0.7552

F(3,317) = 26.94
Prob > F = 0.0000

y_price	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
x1_ncogl	.0803272	.0493459	1.63	0.105	-.0167598	.1774141
cv1_ta	-.2064749	.0727576	-2.84	0.005	-.3496236	-.0633262
cv2_cboe	-.220521	.0338901	-6.51	0.000	-.2871989	-.1538431
_cons	6.185872	.8471235	7.30	0.000	4.519177	7.852567
sigma_u	.75384923					
sigma_e	.16532696					
rho	.95411012	(fraction of variance due to u_i)				

F test that all u_i=0: F(9, 317) = 220.75

Prob > F = 0.0000

B-4 FGLS Model

```
. xtgls y_price x1_ncogl x2_llril x3_nplgl x4_llppl cv1_ta cv2_cboe
```

Cross-sectional time-series FGLS regression

Coefficients: generalized least squares

Panels: homoskedastic

Correlation: no autocorrelation

Estimated covariances	=	1	Number of obs	=	330
Estimated autocorrelations	=	0	Number of groups	=	10
Estimated coefficients	=	7	Time periods	=	33
			Wald chi2(6)	=	467.48
Log likelihood	=	-157.5958	Prob > chi2	=	0.0000

y_price	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
x1_ncogl	-.5181107	.0957839	-5.41	0.000	-.7058436	-.3303777
x2_llril	.705317	.0840073	8.40	0.000	.5406657	.8699684
x3_nplgl	.3294179	.0623687	5.28	0.000	.2071776	.4516583
x4_llppl	-.3407548	.0910872	-3.74	0.000	-.5192825	-.1622271
cv1_ta	.4782428	.0259492	18.43	0.000	.4273833	.5291023
cv2_cboe	-.3678299	.0835829	-4.40	0.000	-.5316492	-.2040105
_cons	-4.555083	.5527473	-8.24	0.000	-5.638447	-3.471718

B-5 Breusch and Pagan LM Test (Pooled OLS Model vs Random Effect Model)

B-6 Hausman Test (Fixed Effect Model vs Random Effect Model)

. hausman fe1

	Coefficients		(b-B)	sqrt(diag(V_b-V_B))
	(b)	(B)	Difference	S.E.
fe1	.	.	.	.
x1_ncogl	.0803272	.092686	-.0123588	.
cv1_ta	-.2064749	-.0919516	-.1145233	.0263936
cv2_cboe	-.220521	-.2388972	.0183762	.

b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)
 = 18.57
 Prob>chi2 = 0.0003
 (V_b-V_B is not positive definite)

B-7 Pesaran CD Test (Cross Sectional Dependency Test)

B-8 Serial Correlation Test

B-9 Heterokedasticity Test

. imtest, white

White's test for H_0 : homoskedasticity
against H_a : unrestricted heteroskedasticity

chi2(9) = 39.04
Prob > chi2 = 0.0000

Cameron & Trivedi's decomposition of IM-test

Source	chi2	df	p
Heteroskedasticity	39.04	9	0.0000
Skewness	9.55	3	0.0228
Kurtosis	0.22	1	0.6417
Total	48.81	13	0.0000

APPENDIX C (MODEL 3)

C-1 Pooled OLS Model

```
. regress y_price x2_llril cv1_ta cv2_cboe
```

Source	SS	df	MS	Number of obs	=	330
				F(3, 326)	=	120.96
Model	63.9242937	3	21.3080979	Prob > F	=	0.0000
Residual	57.4292092	326	.176163218	R-squared	=	0.5268
				Adj R-squared	=	0.5224
Total	121.353503	329	.368855632	Root MSE	=	.41972

y_price	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
x2_llril	.4389968	.0642063	6.84	0.000	.3126858 .5653078
cv1_ta	.4454441	.0270252	16.48	0.000	.3922782 .4986099
cv2_cboe	-.4206332	.0813018	-5.17	0.000	-.5805757 -.2606908
_cons	-2.889793	.484023	-5.97	0.000	-3.841995 -1.93759

C-2 Random Effect Model

```
. xtreg y_price x2_llril cv1_ta cv2_cboe, re
```

Random-effects GLS regression
Group variable: bankcount

Number of obs = 330
Number of groups = 10

R-sq:

within = 0.2816
between = 0.0937
overall = 0.1044

Obs per group:

min = 33
avg = 33.0
max = 33

corr(u_i, X) = 0 (assumed)

Wald chi2(3) = 123.35
Prob > chi2 = 0.0000

y_price	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
x2_llril	.340121	.0507034	6.71	0.000	.2407441	.4394979
cv1_ta	-.0087922	.0661721	-0.13	0.894	-.1384871	.1209027
cv2_cboe	-.325136	.0345868	-9.40	0.000	-.3929249	-.2573471
_cons	2.6811	.8509319	3.15	0.002	1.013305	4.348896
sigma_u	.45605487					
sigma_e	.15662886					
rho	.89449191	(fraction of variance due to u_i)				

```
. xtreg y_price x2_llril cv1_ta cv2_cboe, fe
```

Fixed-effects (within) regression

Group variable: bankcount

R-sq:

within = 0.2848

between = 0.0329

overall = 0.0010

Number of obs = 42

Number of groups = 7

Obs per group:

min = 3

avg = 6.0

max = 10

F(3,317) = 224.88

Prob > F = 0.0000

corr(u_i, Xb) = -0.2805

y_price	Coef.	Std. Err.	t	P> t	[95% Conf. Interv.	
x2_llril	.3184549	.0509036	6.26	0.000	.2183033	.4186065
cv1_ta	-.0934823	.0711624	-1.31	0.190	-.2334925	.0465279
cv2_cboe	-.306709	.03476	-8.82	0.000	-.3750985	-.2383195
_cons	3.732085	.8989575	4.15	0.000	1.963408	5.500761
sigma_u	.64391678					
sigma_e	.15662886					
rho	.94413763	(fraction of variance due to u_i)				

F test that all u_i=0: F(9, 317) = 224.88 Prob > F = 0.0000

C-4 FGLS Model

```
. xtglsl y_price x2_llril cv1_ta cv2_cboe
```

Cross-sectional time-series FGLS regression

Coefficients: generalized least squares

Panels: homoskedastic

Correlation: no autocorrelation

Estimated covariances	=	1	Number of obs	=	330
Estimated autocorrelations	=	0	Number of groups	=	10
Estimated coefficients	=	4	Time periods	=	33
			Wald chi2(3)	=	367.32
Log likelihood	=	-179.7407	Prob > chi2	=	0.0000

y_price	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
x2_llril	.4389968	.063816	6.88	0.000	.3139197	.5640739
cv1_ta	.4454441	.0268609	16.58	0.000	.3927976	.4980905
cv2_cboe	-.4206332	.0808076	-5.21	0.000	-.5790132	-.2622533
_cons	-2.889793	.4810805	-6.01	0.000	-3.832693	-1.946892

C-5 Breusch and Pagan LM Test (Pooled OLS Model vs Random Effect Model)

C-6 Hausman Test (Fixed Effect Model vs Random Effect Model)

. hausman fe2

	Coefficients			
	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fe2	.	Difference	S.E.
x2_llril	.3184549	.340121	-.0216661	.00451
cv1_ta	-.0934823	-.0087922	-.0846901	.0261789
cv2_cboe	-.306709	-.325136	.018427	.0034658

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)
 = 10.45
 Prob>chi2 = 0.0151
 (V_b-V_B is not positive definite)

C-7 Pesaran CD Test (Cross Sectional Dependency Test)

C-8 Serial Correlation Test

```
. xtserial y_price x2_llril cv1_ta cv2_cboe
```

Wooldridge test for autocorrelation in panel

H0: no first-order autocorrelation

F(1, 9)

C-9 Heteroskedasticity Test

```
. imtest, white
```

White's test for H0: homoskedasticity

against Ha: unrestricted heteroskedasticity

chi2(9) = 59.97

Prob > chi2 = 0.0000

Cameron & Trivedi's decomposition of IM-test

Source	chi2	df	p
Heteroskedasticity	59.97	9	0.0000
Skewness	13.50	3	0.0037
Kurtosis	0.07	1	0.7968
Total	73.53	13	0.0000

APPENDIX D (MODEL 4)

D-1 Pooled OLS Model

```
. regress y_price x3_nplgl cv1_ta cv2_cboe
```

Source	SS	df	MS	Number of obs	=	330
				F(3, 326)	=	97.81
Model	57.4850737	3	19.1616912	Prob > F	=	0.0000
Residual	63.8684292	326	.195915427	R-squared	=	0.4737
				Adj R-squared	=	0.4689
Total	121.353503	329	.368855632	Root MSE	=	.44262

y_price	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
x3_nplgl	-.1324472	.0437429	-3.03	0.003	-.2185012 -.0463932
cv1_ta	.4549229	.0286358	15.89	0.000	.3985885 .5112572
cv2_cboe	-.3475944	.0848693	-4.10	0.000	-.5145551 -.1806337
_cons	-1.237705	.4688787	-2.64	0.009	-2.160115 -.3152949

D-2 Random Effect Model

```
. xtreg y_price x3_nplgl cv1_ta cv2_cboe, re
```

Random-effects GLS regression
Group variable: bankcount

Number of obs = 330
Number of groups = 10

R-sq:

within = 0.2849
between = 0.2703
overall = 0.1661

Obs per group:

min = 33
avg = 33.0
max = 33

corr(u_i, X) = 0 (assumed)

Wald chi2(3) = 111.95
Prob > chi2 = 0.0000

y_price	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
x3_nplgl	-.2669476	.0452005	-5.91	0.000	-.3555391	-.1783562
cv1_ta	-.2607312	.0681654	-3.82	0.000	-.3943329	-.1271294
cv2_cboe	-.23716	.0325296	-7.29	0.000	-.3009169	-.1734031
_cons	7.033449	.8129185	8.65	0.000	5.440158	8.62674
sigma_u	.47724633					
sigma_e	.15603914					
rho	.90342313	(fraction of variance due to u_i)				

D-3 Fixed Effect Model

```
. xtreg y_price x3_nplgl cv1_ta cv2_cboe, fe
```

```
Fixed-effects (within) regression               Number of obs   =       330
Group variable: bankcount                      Number of groups =        10

R-sq:                                         Obs per group:
    within = 0.2902                          min =           33
    between = 0.3407                         avg =          33.0
    overall = 0.2393                         max =           33

F(3,317) = 43.20
corr(u_i, Xb) = -0.7865                     Prob > F = 0.0000
```

y_price	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
x3_nplgl	-.2896479	.0447817	-6.47	0.000	-.3777548	-.201541
cv1_ta	-.3771468	.0715039	-5.27	0.000	-.517829	-.2364646
cv2_cboe	-.2192568	.0319608	-6.86	0.000	-.2821389	-.1563747
_cons	8.379457	.8357226	10.03	0.000	6.735194	10.02372
sigma_u	.86411268					
sigma_e	.15603914					
rho	.96842155	(fraction of variance due to u_i)				

```
F test that all u_i=0: F(9, 317) = 256.24                Prob > F = 0.0000
```

```
.
```

D-4 FGLS Model

```
. xtgls y_price x3_nplgl cv1_ta cv2_cboe
```

Cross-sectional time-series FGLS regression

Coefficients: generalized least squares

Panels: homoskedastic

Correlation: no autocorrelation

Estimated covariances	=	1	Number of obs	=	330
Estimated autocorrelations	=	0	Number of groups	=	10
Estimated coefficients	=	4	Time periods	=	33
			Wald chi2(3)	=	297.02
Log likelihood	=	-197.2756	Prob > chi2	=	0.0000

y_price	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
x3_nplgl	-.1324472	.043477	-3.05	0.002	-.2176605	-.0472339
cv1_ta	.4549229	.0284618	15.98	0.000	.3991388	.5107069
cv2_cboe	-.3475944	.0843534	-4.12	0.000	-.512924	-.1822647
_cons	-1.237705	.4660283	-2.66	0.008	-2.151104	-.324306

D-5 Breusch and Pagan LM Test (Pooled OLS Model vs Random Effect Model)

D-6 Hausman Test (Fixed Effect Model vs Random Effect Model)

. hausman fe3

	Coefficients		(b-B)	sqrt(diag(V_b-V_B))
	(b)	(B)	Difference	S.E.
	fe3	.		
x3_nplgl	-.2896479	-.2669476	-.0227003	.
cv1_ta	-.3771468	-.2607312	-.1164156	.0215937
cv2_cboe	-.2192568	-.23716	.0179031	.

b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)
 = 29.06
 Prob>chi2 = 0.0000
 (V_b-V_B is not positive definite)

D-7 Pesaran CD Test (Cross Sectional Dependency Test)

D-8 Serial Correlation Test

```
. xtserial y_price x3_nplgl cv1_ta cv2_cboe
```

Wooldridge test for autocorrelation in panel

H0: no first-order autocorrelation

F(1, 9)

D-9 Heteroskedasticity Test

```
. imtest, white
```

White's test for H0: homoskedasticity

against Ha: unrestricted heteroskedasticity

chi2(9) = 94.78

Prob > chi2 = 0.0000

Cameron & Trivedi's decomposition of IM-test

Source	chi2	df	p
Heteroskedasticity	94.78	9	0.0000
Skewness	24.03	3	0.0000
Kurtosis	0.55	1	0.4578
Total	119.36	13	0.0000

APPENDIX E (MODEL 5)

E-1 Pooled OLS Model

```
. regress y_price x4_llpgl cv1_ta cv2_cboe
```

Source	SS	df	MS	Number of obs	=	330
Model	58.5658233	3	19.5219411	F(3, 326)	=	101.36
Residual	62.7876796	326	.192600244	Prob > F	=	0.0000
				R-squared	=	0.4826
				Adj R-squared	=	0.4778
Total	121.353503	329	.368855632	Root MSE	=	.43886

y_price	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
x4_llpgl	-.3482204	.0900993	-3.86	0.000	-.5254697	-.170971
cv1_ta	.4566063	.0282069	16.19	0.000	.4011158	.5120968
cv2_cboe	-.2124846	.0903539	-2.35	0.019	-.3902348	-.0347343
_cons	-1.749291	.4632011	-3.78	0.000	-2.660532	-.8380505

E-2 Random Effect Model

```
. xtreg y_price x4_llpgl cv1_ta cv2_cboe, re
```

Random-effects GLS regression
Group variable: bankcount

Number of obs = 330
Number of groups = 10

R-sq:

within = 0.3203
between = 0.0023
overall = 0.0294

Obs per group:

min = 33
avg = 33.0
max = 33

corr(u_i, X) = 0 (assumed)

Wald chi2(3) = 147.00
Prob > chi2 = 0.0000

y_price	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
x4_llpgl	-.3260183	.0409854	-7.95	0.000	-.4063483	-.2456884
cv1_ta	-.0164758	.064543	-0.26	0.799	-.1429777	.1100261
cv2_cboe	-.1408527	.0335497	-4.20	0.000	-.206609	-.0750965
_cons	3.685976	.7752235	4.75	0.000	2.166566	5.205386
sigma_u	.48180903					
sigma_e	.15242759					
rho	.90901909	(fraction of variance due to u_i)				

E-3 Fixed Effect Model

```
. xtreg y_price x4_llpgl cv1_ta cv2_cboe, fe
```

```
Fixed-effects (within) regression      Number of obs   =       330
Group variable: bankcount             Number of groups =        10

R-sq:                                Obs per group:
    within = 0.3227                      min =          33
    between = 0.2638                     avg =         33.0
    overall = 0.0283                      max =          33

corr(u_i, Xb) = -0.3734                 F(3,317)        =       50.33
                                         Prob > F         =      0.0000
```

y_price	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
x4_llpgl	-.3138311	.0408433	-7.68	0.000	-.3941892	-.2334729
cv1_ta	-.0880352	.0684964	-1.29	0.200	-.2228002	.0467297
cv2_cboe	-.1331999	.0333288	-4.00	0.000	-.1987735	-.0676263
_cons	4.51841	.8051537	5.61	0.000	2.93429	6.102531
sigma_u	.65767681					
sigma_e	.15242759					
rho	.94902249	(fraction of variance due to u_i)				

```
F test that all u_i=0: F(9, 317) = 265.04          Prob > F = 0.0000
```

E-4 FGLS Model

```
. xtglm y_price x3_nplgl cv1_ta cv2_cboe
```

Cross-sectional time-series FGLS regression

Coefficients: generalized least squares

Panels: homoskedastic

Correlation: no autocorrelation

Estimated covariances	=	1	Number of obs	=	330
Estimated autocorrelations	=	0	Number of groups	=	10
Estimated coefficients	=	4	Time periods	=	33
			Wald chi2(3)	=	297.02
Log likelihood	=	-197.2756	Prob > chi2	=	0.0000

y_price	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
x3_nplgl	-.1324472	.043477	-3.05	0.002	-.2176605 -.0472339
cv1_ta	.4549229	.0284618	15.98	0.000	.3991388 .5107069
cv2_cboe	-.3475944	.0843534	-4.12	0.000	-.512924 -.1822647
_cons	-1.237705	.4660283	-2.66	0.008	-2.151104 -.324306

E-5 Breusch and Pagan LM Test (Pooled OLS Model vs Random Effect Model)

E-6 Hausman Test (Fixed Effect Model vs Random Effect Model)

. hausman fe4

	Coefficients		(b-B)	sqrt(diag(V_b-V_B))
	(b)	(B)	Difference	S.E.
	fe4	.		
x4_llpgl	-.3138311	-.3260183	.0121873	.
cv1_ta	-.0880352	-.0164758	-.0715594	.0229339
cv2_cboe	-.1331999	-.1408527	.0076528	.

b = consistent under Ho and Ha; obtained from xtreg
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)
 = 9.73
 Prob>chi2 = 0.0210
 (V_b-V_B is not positive definite)

E-7 Pesaran CD Test (Cross Sectional Dependency Test)

E-8 Serial Correlation Test

```
. xtserial y_price x3_nplgl cv1_ta cv2_cboe
```

Wooldridge test for autocorrelation in panel

H0: no first-order autocorrelation

F(1, 9)

E-9 Heteroskedasticity Test

```
. imtest, white
```

White's test for H0: homoskedasticity

against Ha: unrestricted heteroskedasticity

chi2(9) = 94.78

Prob > chi2 = 0.0000

Cameron & Trivedi's decomposition of IM-test

Source	chi2	df	p
Heteroskedasticity	94.78	9	0.0000
Skewness	24.03	3	0.0000
Kurtosis	0.55	1	0.4578
Total	119.36	13	0.0000

APPENDIX F (PANEL DATA SET)

BANK	TIME	PRICE	NCR	LLR	NPL	LLP	TA	CBOE
CIMB Group Holdings Berhad	2012q4	3.111736	1.06	4.42	1.34	0.16	12.73	3.960623
CIMB Group Holdings Berhad	2013q1	3.081451	0.43	4.41	1.32	0.09	12.81	3.749269
CIMB Group Holdings Berhad	2013q2	3.17847	0.23	4.41	1.27	0.14	12.81	3.843316
CIMB Group Holdings Berhad	2013q3	3.109507	0.60	4.41	1.22	0.22	12.82	3.851423
CIMB Group Holdings Berhad	2013q4	3.109061	0.53	4.44	1.15	0.30	12.82	3.71771
CIMB Group Holdings Berhad	2014q1	3.044046	0.60	4.43	1.12	0.16	12.85	3.834926
CIMB Group Holdings Berhad	2014q2	3.087399	0.58	4.37	1.14	0.18	12.86	3.594019
CIMB Group Holdings Berhad	2014q3	3.052113	0.54	4.31	1.19	0.33	12.88	3.811982
CIMB Group Holdings Berhad	2014q4	2.872434	0.44	4.41	1.13	0.61	12.93	3.840742
CIMB Group Holdings Berhad	2015q1	2.860485	0.22	4.43	1.15	0.81	12.99	3.903991
CIMB Group Holdings Berhad	2015q2	2.823757	0.54	4.36	1.20	0.79	13.00	3.84208
CIMB Group Holdings Berhad	2015q3	2.685805	0.43	4.34	1.23	0.76	13.07	4.175156
CIMB Group Holdings Berhad	2015q4	2.60269	0.51	4.44	1.12	0.77	13.04	3.900153
CIMB Group Holdings Berhad	2016q1	2.592265	0.51	4.44	1.11	0.64	13.05	4.001864
CIMB Group Holdings Berhad	2016q2	2.586259	0.47	4.43	1.15	0.71	13.06	3.818152
CIMB Group Holdings Berhad	2016q3	2.628285	0.64	4.39	1.17	0.73	13.09	3.652734
CIMB Group Holdings Berhad	2016q4	2.646884	0.61	4.38	1.19	0.77	13.09	3.793915
CIMB Group Holdings Berhad	2017q1	2.741485	0.60	4.38	1.15	0.53	13.13	3.618457
CIMB Group Holdings Berhad	2017q2	2.929592	0.74	4.35	1.17	0.66	13.12	3.478467
CIMB Group Holdings Berhad	2017q3	2.992226	0.66	4.28	1.24	0.68	13.14	3.413126
CIMB Group Holdings Berhad	2017q4	2.930127	0.64	4.26	1.22	0.69	13.14	3.48124
CIMB Group Holdings Berhad	2018q1	3.074081	0.70	4.50	1.17	0.50	13.14	3.977061
CIMB Group Holdings Berhad	2018q2	2.92047	0.47	4.51	1.15	0.46	13.15	3.859677
CIMB Group Holdings Berhad	2018q3	2.887033	0.45	4.52	1.12	0.46	13.17	3.632574
CIMB Group Holdings Berhad	2018q4	2.844328	0.56	4.51	1.07	0.43	13.19	4.17007
CIMB Group Holdings Berhad	2019q1	2.810607	0.25	4.52	1.05	0.35	13.22	3.807995
CIMB Group Holdings Berhad	2019q2	2.767576	0.86	4.36	1.14	0.36	13.23	3.848231
CIMB Group Holdings Berhad	2019q3	2.71932	0.67	4.34	1.15	0.34	13.25	3.93847
CIMB Group Holdings Berhad	2019q4	2.745988	0.49	4.39	1.12	0.46	13.26	3.679334
CIMB Group Holdings Berhad	2020q1	2.591516	0.37	4.33	1.23	1.06	13.28	4.722864
CIMB Group Holdings Berhad	2020q2	2.377693	0.43	4.41	1.28	1.33	13.30	4.522766
CIMB Group Holdings Berhad	2020q3	2.299581	0.47	4.54	1.21	1.44	13.31	4.346917
CIMB Group Holdings Berhad	2020q4	2.386926	0.50	4.52	1.27	1.45	13.31	4.398638
Alliance Bank Malaysia Berhad	2012q4	2.508623	0.12	4.43	0.75	-0.15	10.61	3.960623
Alliance Bank Malaysia Berhad	2013q1	2.540657	0.38	4.41	0.72	-0.09	10.68	3.749269
Alliance Bank Malaysia Berhad	2013q2	2.667228	0.05	4.44	0.66	0.08	10.69	3.843316
Alliance Bank Malaysia Berhad	2013q3	2.713038	0.17	4.46	0.55	-0.01	10.73	3.851423
Alliance Bank Malaysia Berhad	2013q4	2.678003	0.25	4.51	0.43	0.01	10.74	3.71771
Alliance Bank Malaysia Berhad	2014q1	2.590317	0.28	4.53	0.31	-0.04	10.78	3.834926
Alliance Bank Malaysia Berhad	2014q2	2.630521	0.15	4.50	0.31	0.03	10.82	3.594019
Alliance Bank Malaysia Berhad	2014q3	2.690565	0.42	4.48	0.18	0.01	10.84	3.811982

Alliance Bank Malaysia Berhad	2014q4	2.664447	0.33	4.54	0.13	0.08	10.84	3.840742
Alliance Bank Malaysia Berhad	2015q1	2.666534	0.29	4.63	0.03	0.11	10.88	3.903991
Alliance Bank Malaysia Berhad	2015q2	2.613007	0.17	4.66	0.01	0.17	10.86	3.84203
Alliance Bank Malaysia Berhad	2015q3	2.429218	0.21	4.53	0.11	0.18	10.88	4.175156
Alliance Bank Malaysia Berhad	2015q4	2.372111	0.20	4.53	0.08	0.14	10.90	3.900153
Alliance Bank Malaysia Berhad	2016q1	2.416806	0.21	4.34	0.23	0.12	10.93	4.001864
Alliance Bank Malaysia Berhad	2016q2	2.491551	0.18	4.43	0.16	0.18	10.91	3.818152
Alliance Bank Malaysia Berhad	2016q3	2.455306	0.21	4.62	-0.06	0.17	10.91	3.652734
Alliance Bank Malaysia Berhad	2016q4	2.447551	0.23	4.58	0.00	0.22	10.89	3.793915
Alliance Bank Malaysia Berhad	2017q1	2.455306	0.25	4.57	0.00	0.23	10.90	3.618457
Alliance Bank Malaysia Berhad	2017q2	2.510412	0.33	4.47	0.10	0.30	10.91	3.478467
Alliance Bank Malaysia Berhad	2017q3	2.457021	0.34	4.44	0.16	0.31	10.89	3.413126
Alliance Bank Malaysia Berhad	2017q4	2.438863	0.30	4.33	0.17	0.18	10.87	3.48124
Alliance Bank Malaysia Berhad	2018q1	2.551006	0.28	4.17	0.36	0.22	10.90	3.977061
Alliance Bank Malaysia Berhad	2018q2	2.536075	0.20	4.38	0.45	0.48	10.89	3.859677
Alliance Bank Malaysia Berhad	2018q3	2.511224	0.26	4.44	0.31	0.33	10.90	3.632574
Alliance Bank Malaysia Berhad	2018q4	2.491551	0.23	4.51	0.25	0.26	10.90	4.17007
Alliance Bank Malaysia Berhad	2019q1	2.508786	0.24	4.66	0.10	0.34	10.94	3.807995
Alliance Bank Malaysia Berhad	2019q2	2.457021	0.25	4.56	0.26	0.51	10.96	3.848231
Alliance Bank Malaysia Berhad	2019q3	2.254445	0.26	4.38	0.51	0.60	10.97	3.93847
Alliance Bank Malaysia Berhad	2019q4	2.105353	0.37	4.29	0.62	0.52	10.98	3.679334
Alliance Bank Malaysia Berhad	2020q1	1.896119	0.28	4.33	0.69	0.64	11.02	4.722864
Alliance Bank Malaysia Berhad	2020q2	1.829376	0.19	4.46	0.64	0.81	11.03	4.522766
Alliance Bank Malaysia Berhad	2020q3	1.874874	0.28	4.67	0.65	1.05	11.03	4.346917
Alliance Bank Malaysia Berhad	2020q4	2.043814	0.23	4.47	0.92	1.21	10.98	4.398638
Affin Bank Berhad	2012q4	2.263428	0.46	4.26	0.79	-0.07	10.86	3.960623
Affin Bank Berhad	2013q1	2.237833	0.25	4.26	0.77	-0.14	10.87	3.749269
Affin Bank Berhad	2013q2	2.426041	0.13	4.30	0.71	-0.13	10.89	3.843316
Affin Bank Berhad	2013q3	2.47452	0.09	4.32	0.68	-0.11	10.90	3.851423
Affin Bank Berhad	2013q4	2.471315	0.14	4.31	0.65	-0.16	10.94	3.71771
Affin Bank Berhad	2014q1	2.426748	0.02	4.33	0.62	-0.06	10.92	3.834926
Affin Bank Berhad	2014q2	2.326009	0.29	4.31	0.63	0.13	10.93	3.594019
Affin Bank Berhad	2014q3	2.322878	0.19	4.33	0.63	0.13	10.95	3.811982
Affin Bank Berhad	2014q4	2.21953	0.23	4.31	0.58	-0.05	10.99	3.840742
Affin Bank Berhad	2015q1	2.160676	1.62	4.20	0.65	1.27	10.95	3.903991
Affin Bank Berhad	2015q2	2.119983	0.79	4.13	0.70	0.68	10.95	3.84203
Affin Bank Berhad	2015q3	1.958826	0.64	4.13	0.75	0.55	10.93	4.175156
Affin Bank Berhad	2015q4	1.953169	0.64	4.18	0.59	0.45	11.00	3.900153
Affin Bank Berhad	2016q1	1.886312	-0.03	4.14	0.63	-0.02	11.02	4.001864
Affin Bank Berhad	2016q2	1.886312	-0.13	4.19	0.63	0.01	11.00	3.818152
Affin Bank Berhad	2016q3	1.855673	0	4.10	0.68	0.02	10.98	3.652734
Affin Bank Berhad	2016q4	1.914419	0.41	4.02	0.47	0.06	11.01	3.793915
Affin Bank Berhad	2017q1	2.047047	0.59	3.64	0.66	0.06	11.02	3.618457
Affin Bank Berhad	2017q2	2.104378	0.47	3.60	0.70	0.20	11.05	3.478467
Affin Bank Berhad	2017q3	2.027753	0.36	3.59	0.77	0.22	11.04	3.413126

Affin Bank Berhad	2017q4	1.976716	0.26	3.35	0.93	0.22	11.16	3.48124
Affin Bank Berhad	2018q1	1.997418	-0.07	3.85	0.93	0.07	11.19	3.977061
Affin Bank Berhad	2018q2	2.020222	0.16	3.80	1.03	0.43	11.18	3.859677
Affin Bank Berhad	2018q3	2.004179	0.08	3.80	1.02	0.32	11.23	3.632574
Affin Bank Berhad	2018q4	1.930071	0.10	3.60	1.18	0.14	11.24	4.17007
Affin Bank Berhad	2019q1	1.906575	-0.06	3.59	1.20	-0.03	11.24	3.807995
Affin Bank Berhad	2019q2	1.867176	-0.02	3.51	1.25	-0.07	11.24	3.848231
Affin Bank Berhad	2019q3	1.790091	0.07	3.57	1.23	0.11	11.19	3.93847
Affin Bank Berhad	2019q4	1.754404	0.10	3.73	1.10	0.11	11.13	3.679334
Affin Bank Berhad	2020q1	1.621366	0.26	3.84	1.13	1.33	11.12	4.722864
Affin Bank Berhad	2020q2	1.545433	0.14	3.93	1.12	0.71	11.12	4.522766
Affin Bank Berhad	2020q3	1.506297	0.08	4.12	1.05	0.96	11.15	4.346917
Affin Bank Berhad	2020q4	1.562346	0.59	3.87	1.26	1.04	11.15	4.398638
BIMB Holdings Berhad	2012q4	2.090629	0.87	4.96	0.44	0.38	10.69	3.960623
BIMB Holdings Berhad	2013q1	2.164472	0.55	5.04	0.40	-0.02	10.77	3.749269
BIMB Holdings Berhad	2013q2	2.368373	0.50	5.10	0.31	0.01	10.76	3.843316
BIMB Holdings Berhad	2013q3	2.494857	0.44	5.07	0.33	0.10	10.79	3.851423
BIMB Holdings Berhad	2013q4	2.600465	0.73	5.17	0.17	-0.07	10.81	3.71771
BIMB Holdings Berhad	2014q1	2.535283	0.29	5.17	0.16	0.27	10.80	3.834926
BIMB Holdings Berhad	2014q2	2.522524	0.32	5.19	0.14	0.26	10.82	3.594019
BIMB Holdings Berhad	2014q3	2.56341	0.49	5.12	0.17	0.29	10.82	3.811982
BIMB Holdings Berhad	2014q4	2.53449	0.38	5.14	0.13	0.22	10.88	3.840742
BIMB Holdings Berhad	2015q1	2.505526	0.75	5.08	0.18	0.41	10.90	3.903991
BIMB Holdings Berhad	2015q2	2.494032	0.56	5.12	0.17	0.37	10.93	3.84203
BIMB Holdings Berhad	2015q3	2.494857	0.53	5.15	0.13	0.21	10.89	4.175156
BIMB Holdings Berhad	2015q4	2.470639	0.33	5.16	0.09	0.21	10.96	3.900153
BIMB Holdings Berhad	2016q1	2.392426	0.53	5.30	-0.06	0.39	10.92	4.001864
BIMB Holdings Berhad	2016q2	2.464704	0.42	5.19	0.05	0.37	10.95	3.818152
BIMB Holdings Berhad	2016q3	2.500616	0.41	5.12	0.09	0.32	10.96	3.652734
BIMB Holdings Berhad	2016q4	2.545531	0.41	5.17	-0.02	0.25	11.05	3.793915
BIMB Holdings Berhad	2017q1	2.581731	0.29	5.17	-0.05	0.09	11.02	3.618457
BIMB Holdings Berhad	2017q2	2.598979	0.30	5.08	0.02	0.17	11.03	3.478467
BIMB Holdings Berhad	2017q3	2.576422	0.32	5.00	0.07	-0.03	11.01	3.413126
BIMB Holdings Berhad	2017q4	2.571849	0.43	4.97	-0.07	-0.04	11.09	3.48124
BIMB Holdings Berhad	2018q1	2.507972	0.50	5.17	-0.01	0.20	11.11	3.977061
BIMB Holdings Berhad	2018q2	2.482404	0.42	5.18	-0.03	0.17	11.10	3.859677
BIMB Holdings Berhad	2018q3	2.460443	0.38	5.18	-0.03	0.19	11.12	3.632574
BIMB Holdings Berhad	2018q4	2.400619	0.35	5.22	-0.08	0.18	11.19	4.17007
BIMB Holdings Berhad	2019q1	2.510412	0.70	5.14	-0.05	0.20	11.19	3.807995
BIMB Holdings Berhad	2019q2	2.626117	0.58	4.90	0.17	0.23	11.21	3.848231
BIMB Holdings Berhad	2019q3	2.500616	0.53	4.94	0.10	0.24	11.23	3.93847
BIMB Holdings Berhad	2019q4	2.550226	0.47	5.16	-0.15	0.17	11.25	3.679334
BIMB Holdings Berhad	2020q1	2.396075	0.36	5.19	-0.19	0.24	11.23	4.722864
BIMB Holdings Berhad	2020q2	2.318458	0.33	5.32	-0.36	0.22	11.28	4.522766
BIMB Holdings Berhad	2020q3	2.361797	0.14	5.63	-0.51	0.54	11.29	4.346917

BIMB Holdings Berhad	2020q4	2.406945	0.21	5.52	-0.40	0.39	11.36	4.398638
Hong Leong Bank Berhad	2012q4	3.752793	0.20	4.94	0.40	-0.06	11.95	3.960623
Hong Leong Bank Berhad	2013q1	3.733614	0.48	4.95	0.34	0.02	11.97	3.749269
Hong Leong Bank Berhad	2013q2	3.716251	0.31	4.88	0.34	0.04	12.01	3.843316
Hong Leong Bank Berhad	2013q3	3.700808	0.37	4.87	0.31	-0.07	12.00	3.851423
Hong Leong Bank Berhad	2013q4	3.722556	0.38	4.85	0.29	0.01	12.02	3.71771
Hong Leong Bank Berhad	2014q1	3.713572	0.42	4.86	0.22	0.04	12.02	3.834926
Hong Leong Bank Berhad	2014q2	3.695855	0.18	4.86	0.17	0.05	12.05	3.594019
Hong Leong Bank Berhad	2014q3	3.730501	0.31	4.86	0.14	-0.04	12.09	3.811982
Hong Leong Bank Berhad	2014q4	3.724729	0.45	4.87	-0.02	-0.13	12.08	3.840742
Hong Leong Bank Berhad	2015q1	3.718681	0.45	4.85	-0.12	-0.09	12.10	3.903991
Hong Leong Bank Berhad	2015q2	3.682861	0.29	4.91	-0.17	-0.05	12.12	3.84203
Hong Leong Bank Berhad	2015q3	3.649099	0.27	4.88	-0.19	0.08	12.14	4.175156
Hong Leong Bank Berhad	2015q4	3.701549	0.28	4.83	-0.15	0.14	12.14	3.900153
Hong Leong Bank Berhad	2016q1	3.681855	0.28	4.85	-0.20	0.12	12.15	4.001864
Hong Leong Bank Berhad	2016q2	3.688879	0.28	4.79	-0.24	0.04	12.15	3.818152
Hong Leong Bank Berhad	2016q3	3.671733	0.22	4.72	-0.17	0.08	12.15	3.652734
Hong Leong Bank Berhad	2016q4	3.691875	0.23	4.67	-0.15	0.08	12.16	3.793915
Hong Leong Bank Berhad	2017q1	3.701796	0.25	4.66	-0.13	0.11	12.18	3.618457
Hong Leong Bank Berhad	2017q2	3.772301	0.26	4.56	-0.04	0.13	12.18	3.478467
Hong Leong Bank Berhad	2017q3	3.850148	0.16	4.56	-0.02	0.14	12.19	3.413126
Hong Leong Bank Berhad	2017q4	3.872866	0.19	4.56	-0.03	0.09	12.22	3.48124
Hong Leong Bank Berhad	2018q1	4.050393	0.34	4.56	-0.17	0.07	12.19	3.977061
Hong Leong Bank Berhad	2018q2	4.032114	0.29	4.49	-0.14	0.06	12.22	3.859677
Hong Leong Bank Berhad	2018q3	4.097672	0.21	4.85	-0.21	0.06	12.24	3.632574
Hong Leong Bank Berhad	2018q4	4.118712	0.21	4.80	-0.22	-0.06	12.26	4.17007
Hong Leong Bank Berhad	2019q1	4.130676	0.21	4.76	-0.22	-0.04	12.24	3.807995
Hong Leong Bank Berhad	2019q2	4.060098	0.21	4.77	-0.25	0.01	12.24	3.848231
Hong Leong Bank Berhad	2019q3	3.930256	0.19	4.70	-0.21	-0.03	12.24	3.93847
Hong Leong Bank Berhad	2019q4	3.940027	0.23	4.63	-0.17	0.01	12.27	3.679334
Hong Leong Bank Berhad	2020q1	3.801315	0.26	4.51	-0.02	0.13	12.29	4.722864
Hong Leong Bank Berhad	2020q2	3.713084	0.35	4.95	-0.49	0.23	12.31	4.522766
Hong Leong Bank Berhad	2020q3	3.785098	0.05	5.25	-0.73	0.28	12.33	4.346917
Hong Leong Bank Berhad	2020q4	3.915617	0.05	5.26	-0.62	0.46	12.34	4.398638
Hong Leong Financial Group Berhad	2012q4	3.642574	-0.33	4.94	0.39	-0.07	12.04	3.960623
Hong Leong Financial Group Berhad	2013q1	3.744551	0.47	4.95	0.33	0.01	12.07	3.749269
Hong Leong Financial Group Berhad	2013q2	3.785552	0.53	4.88	0.33	0.04	12.10	3.843316
Hong Leong Financial Group Berhad	2013q3	3.743841	0.42	4.87	0.29	-0.07	12.10	3.851423
Hong Leong Financial Group Berhad	2013q4	3.820127	0.42	4.85	0.28	0.01	12.12	3.71771
Hong Leong Financial Group Berhad	2014q1	3.838807	0.41	4.86	0.21	-0.01	12.12	3.834926
Hong Leong Financial Group Berhad	2014q2	3.829076	0.30	4.86	0.16	0.01	12.16	3.594019
Hong Leong Financial Group Berhad	2014q3	3.935544	0.23	4.86	0.12	-0.06	12.19	3.811982
Hong Leong Financial Group Berhad	2014q4	3.939638	0.27	4.87	-0.03	-0.13	12.18	3.840742
Hong Leong Financial Group Berhad	2015q1	3.908417	0.31	4.85	-0.12	-0.11	12.20	3.903991
Hong Leong Financial Group Berhad	2015q2	3.828859	0.28	4.91	-0.19	-0.05	12.22	3.84203

Hong Leong Financial Group Berhad	2015q3	3.762594	0.27	4.88	-0.20	0.08	12.23	4.175156
Hong Leong Financial Group Berhad	2015q4	3.73457	0.28	4.83	-0.16	0.14	12.24	3.900153
Hong Leong Financial Group Berhad	2016q1	3.768153	0.28	4.85	-0.21	0.14	12.25	4.001864
Hong Leong Financial Group Berhad	2016q2	3.795489	0.28	4.79	-0.24	0.04	12.26	3.818152
Hong Leong Financial Group Berhad	2016q3	3.844172	0.22	4.72	-0.19	0.09	12.25	3.652734
Hong Leong Financial Group Berhad	2016q4	3.805328	0.23	4.67	-0.16	0.09	12.27	3.793915
Hong Leong Financial Group Berhad	2017q1	3.821223	0.24	4.66	-0.14	0.10	12.29	3.618457
Hong Leong Financial Group Berhad	2017q2	3.920785	0.26	4.56	-0.04	0.13	12.30	3.478467
Hong Leong Financial Group Berhad	2017q3	3.924347	0.16	4.56	-0.02	0.14	12.31	3.413126
Hong Leong Financial Group Berhad	2017q4	3.924742	0.19	4.56	-0.03	0.09	12.33	3.48124
Hong Leong Financial Group Berhad	2018q1	4.041647	0.33	4.56	-0.17	0.07	12.32	3.977061
Hong Leong Financial Group Berhad	2018q2	4.032114	0.29	4.49	-0.14	0.06	12.34	3.859677
Hong Leong Financial Group Berhad	2018q3	4.043051	0.21	4.85	-0.21	0.06	12.37	3.632574
Hong Leong Financial Group Berhad	2018q4	4.029273	0.21	4.80	-0.22	-0.06	12.39	4.17007
Hong Leong Financial Group Berhad	2019q1	4.070393	0.21	4.75	-0.22	-0.03	12.37	3.807995
Hong Leong Financial Group Berhad	2019q2	4.038479	0.21	4.77	-0.25	0.01	12.38	3.848231
Hong Leong Financial Group Berhad	2019q3	3.933784	0.19	4.69	-0.21	-0.03	12.38	3.93847
Hong Leong Financial Group Berhad	2019q4	3.924347	0.22	4.63	-0.19	0.02	12.41	3.679334
Hong Leong Financial Group Berhad	2020q1	3.809326	0.25	4.50	-0.02	0.13	12.42	4.722864
Hong Leong Financial Group Berhad	2020q2	3.678829	0.35	4.95	-0.49	0.23	12.44	4.522766
Hong Leong Financial Group Berhad	2020q3	3.690378	0.05	5.25	-0.76	0.27	12.47	4.346917
Hong Leong Financial Group Berhad	2020q4	3.8828	0.17	5.26	-0.62	0.46	12.48	4.398638
Malayan Banking Berhad	2012q4	3.306154	0.48	4.66	0.58	0.23	13.11	3.960623
Malayan Banking Berhad	2013q1	3.309813	0.27	4.60	0.63	0.11	13.15	3.749269
Malayan Banking Berhad	2013q2	3.407842	0.04	4.64	0.62	0.32	13.19	3.843316
Malayan Banking Berhad	2013q3	3.404525	0.28	4.67	0.60	0.32	13.21	3.851423
Malayan Banking Berhad	2013q4	3.383712	0.47	4.68	0.39	0.21	13.24	3.71771
Malayan Banking Berhad	2014q1	3.370394	0.19	4.67	0.22	0.21	13.27	3.834926
Malayan Banking Berhad	2014q2	3.388112	0.19	4.68	0.20	0.18	13.28	3.594019
Malayan Banking Berhad	2014q3	3.399195	0.23	4.56	0.29	0.14	13.32	3.811982
Malayan Banking Berhad	2014q4	3.343921	0.28	4.56	0.42	0.09	13.37	3.840742
Malayan Banking Berhad	2015q1	3.305054	0.47	4.54	0.41	0.23	13.40	3.903991
Malayan Banking Berhad	2015q2	3.309813	0.55	4.42	0.44	0.26	13.40	3.84203
Malayan Banking Berhad	2015q3	3.277899	0.51	4.45	0.43	0.37	13.46	4.175156
Malayan Banking Berhad	2015q4	3.218076	0.51	4.28	0.62	0.39	13.47	3.900153
Malayan Banking Berhad	2016q1	3.262318	0.32	4.25	0.75	0.77	13.46	4.001864
Malayan Banking Berhad	2016q2	3.228034	0.27	4.26	0.85	0.81	13.49	3.818152
Malayan Banking Berhad	2016q3	3.150169	0.28	4.32	0.80	0.64	13.48	3.652734
Malayan Banking Berhad	2016q4	3.172622	0.36	4.28	0.82	0.60	13.51	3.793915
Malayan Banking Berhad	2017q1	3.248046	0.20	4.27	0.88	0.45	13.52	3.618457
Malayan Banking Berhad	2017q2	3.355153	0.34	4.25	0.93	0.58	13.53	3.478467
Malayan Banking Berhad	2017q3	3.350956	0.28	4.27	0.92	0.49	13.55	3.413126
Malayan Banking Berhad	2017q4	3.342862	0.56	4.27	0.85	0.40	13.55	3.48124
Malayan Banking Berhad	2018q1	3.439135	0.84	4.47	0.87	0.41	13.55	3.977061
Malayan Banking Berhad	2018q2	3.382354	0.54	4.37	0.97	0.44	13.59	3.859677

Malayan Banking Berhad	2018q3	3.386422	0.48	4.36	0.98	0.40	13.58	3.632574
Malayan Banking Berhad	2018q4	3.345685	0.42	4.41	0.88	0.32	13.60	4.17007
Malayan Banking Berhad	2019q1	3.344274	0.35	4.37	0.91	0.47	13.61	3.807995
Malayan Banking Berhad	2019q2	3.301377	0.31	4.31	0.97	0.38	13.62	3.848231
Malayan Banking Berhad	2019q3	3.252311	0.38	4.29	0.99	0.50	13.65	3.93847
Malayan Banking Berhad	2019q4	3.249211	0.37	4.28	0.97	0.44	13.63	3.679334
Malayan Banking Berhad	2020q1	3.190476	0.17	4.34	1.00	0.74	13.65	4.722864
Malayan Banking Berhad	2020q2	3.117065	0.58	4.42	0.91	1.04	13.66	4.522766
Malayan Banking Berhad	2020q3	3.100993	0.52	4.50	0.85	0.90	13.68	4.346917
Malayan Banking Berhad	2020q4	3.151025	0.58	4.59	0.80	0.88	13.66	4.398638
Public Bank Berhad	2012q4	2.224624	0.25	4.84	-0.37	0.15	12.52	3.960623
Public Bank Berhad	2013q1	2.227862	0.31	4.82	-0.39	0.16	12.57	3.749269
Public Bank Berhad	2013q2	2.277267	0.27	4.81	-0.40	0.16	12.59	3.843316
Public Bank Berhad	2013q3	2.312535	0.27	4.76	-0.37	0.17	12.61	3.851423
Public Bank Berhad	2013q4	2.386007	0.26	4.78	-0.40	0.17	12.63	3.71771
Public Bank Berhad	2014q1	2.407846	0.23	4.78	-0.42	0.15	12.65	3.834926
Public Bank Berhad	2014q2	2.48574	0.22	4.77	-0.43	0.13	12.69	3.594019
Public Bank Berhad	2014q3	2.451005	0.20	4.76	-0.43	0.11	12.71	3.811982
Public Bank Berhad	2014q4	2.406044	0.20	4.81	-0.49	0.11	12.75	3.840742
Public Bank Berhad	2015q1	2.404239	0.22	4.85	-0.58	0.12	12.78	3.903991
Public Bank Berhad	2015q2	2.428336	0.21	4.86	-0.62	0.11	12.80	3.84203
Public Bank Berhad	2015q3	2.388763	0.22	4.87	-0.63	0.13	12.80	4.175156
Public Bank Berhad	2015q4	2.397895	0.22	4.79	-0.71	0.06	12.80	3.900153
Public Bank Berhad	2016q1	2.410542	0.18	4.79	-0.73	0.10	12.83	4.001864
Public Bank Berhad	2016q2	2.437116	0.18	4.76	-0.71	0.10	12.85	3.818152
Public Bank Berhad	2016q3	2.469793	0.18	4.70	-0.65	0.11	12.86	3.652734
Public Bank Berhad	2016q4	2.470639	0.18	4.63	-0.67	0.07	12.85	3.793915
Public Bank Berhad	2017q1	2.484073	0.19	4.64	-0.71	0.09	12.87	3.618457
Public Bank Berhad	2017q2	2.489894	0.18	4.59	-0.69	0.06	12.88	3.478467
Public Bank Berhad	2017q3	2.507157	0.17	4.59	-0.69	0.08	12.88	3.413126
Public Bank Berhad	2017q4	2.503892	0.16	4.56	-0.73	0.07	12.89	3.48124
Public Bank Berhad	2018q1	2.624669	0.15	4.83	-0.73	0.09	12.89	3.977061
Public Bank Berhad	2018q2	2.653242	0.15	4.76	-0.69	0.06	12.92	3.859677
Public Bank Berhad	2018q3	2.696652	0.15	4.70	-0.65	0.06	12.94	3.632574
Public Bank Berhad	2018q4	2.698	0.16	4.84	-0.67	0.05	12.95	4.17007
Public Bank Berhad	2019q1	2.680336	0.14	4.83	-0.69	0	12.95	3.807995
Public Bank Berhad	2019q2	2.626117	0.14	4.75	-0.63	0.04	12.96	3.848231
Public Bank Berhad	2019q3	2.522524	0.14	4.77	-0.65	0.05	12.97	3.93847
Public Bank Berhad	2019q4	2.474014	0.15	4.82	-0.71	0.05	12.98	3.679334
Public Bank Berhad	2020q1	2.334084	0.14	4.88	-0.78	0.07	12.99	4.722864
Public Bank Berhad	2020q2	2.252344	0.13	5.07	-0.92	0.13	13.00	4.522766
Public Bank Berhad	2020q3	2.284421	0.14	5.34	-1.11	0.22	13.02	4.346917
Public Bank Berhad	2020q4	2.362739	0.13	5.43	-1.02	0.33	13.02	4.398638
RHB Bank Berhad	2012q4	2.811809	0.60	4.26	1.03	0.14	12.05	3.960623
RHB Bank Berhad	2013q1	2.870169	0.24	4.29	1.02	0.57	12.01	3.749269

RHB Bank Berhad	2013q2	2.943386	0.24	4.15	1.10	0.54	12.03	3.843316
RHB Bank Berhad	2013q3	2.838493	0.51	4.14	1.03	0.39	12.05	3.851423
RHB Bank Berhad	2013q4	2.843164	0.45	4.17	1.03	0.37	12.07	3.71771
RHB Bank Berhad	2014q1	2.880882	0.28	4.24	0.92	0.18	12.10	3.834926
RHB Bank Berhad	2014q2	2.918311	0.27	4.22	0.88	0.14	12.15	3.594019
RHB Bank Berhad	2014q3	2.988708	0.37	4.21	0.81	0.19	12.17	3.811982
RHB Bank Berhad	2014q4	2.893146	0.63	4.16	0.66	0.19	12.23	3.840742
RHB Bank Berhad	2015q1	2.870169	0.25	4.14	0.68	0.15	12.26	3.903991
RHB Bank Berhad	2015q2	2.824944	0.24	4.07	0.68	0.01	12.26	3.84203
RHB Bank Berhad	2015q3	2.679651	0.30	4.07	0.63	0.09	12.28	4.175156
RHB Bank Berhad	2015q4	2.566487	0.30	4.15	0.63	0.23	12.34	3.900153
RHB Bank Berhad	2016q1	2.539237	0.22	4.23	0.57	0.18	12.27	4.001864
RHB Bank Berhad	2016q2	2.668616	0.21	4.08	0.72	0.19	12.33	3.818152
RHB Bank Berhad	2016q3	2.690565	0.20	4.03	0.81	0.30	12.34	3.652734
RHB Bank Berhad	2016q4	2.670002	0.25	4.04	0.89	0.39	12.37	3.793915
RHB Bank Berhad	2017q1	2.702032	0.20	4.10	0.87	0.35	12.36	3.618457
RHB Bank Berhad	2017q2	2.769459	0.21	4.11	0.83	0.21	12.36	3.478467
RHB Bank Berhad	2017q3	2.713369	0.21	4.13	0.84	0.27	12.37	3.413126
RHB Bank Berhad	2017q4	2.706716	0.51	3.94	0.80	0.27	12.35	3.48124
RHB Bank Berhad	2018q1	2.775709	0.36	4.45	0.83	0.26	12.37	3.977061
RHB Bank Berhad	2018q2	2.778819	0.31	4.43	0.85	0.23	12.37	3.859677
RHB Bank Berhad	2018q3	2.787477	0.27	4.45	0.86	0.20	12.38	3.632574
RHB Bank Berhad	2018q4	2.758109	0.34	4.54	0.72	0.20	12.40	4.17007
RHB Bank Berhad	2019q1	2.820783	0.26	4.50	0.75	0.22	12.43	3.807995
RHB Bank Berhad	2019q2	2.85532	0.38	4.44	0.77	0.20	12.44	3.848231
RHB Bank Berhad	2019q3	2.823757	0.34	4.43	0.77	0.19	12.44	3.93847
RHB Bank Berhad	2019q4	2.844328	0.39	4.45	0.68	0.18	12.46	3.679334
RHB Bank Berhad	2020q1	2.768204	0.22	4.47	0.69	0.34	12.46	4.722864
RHB Bank Berhad	2020q2	2.660959	0.24	4.55	0.63	0.40	12.48	4.522766
RHB Bank Berhad	2020q3	2.651127	0.19	4.68	0.52	0.39	12.48	4.346917
RHB Bank Berhad	2020q4	2.696652	0.04	4.78	0.54	0.59	12.51	4.398638
AMMB Holdings Berhad	2012q4	2.973487	0.35	4.82	0.73	0.16	11.72	3.960623
AMMB Holdings Berhad	2013q1	2.956472	0.98	4.86	0.68	0.21	11.76	3.749269
AMMB Holdings Berhad	2013q2	3.061988	0.06	4.88	0.63	-0.10	11.75	3.843316
AMMB Holdings Berhad	2013q3	3.121483	0.98	4.86	0.67	-0.25	11.77	3.851423
AMMB Holdings Berhad	2013q4	3.092405	1.08	4.78	0.68	0.07	11.78	3.71771
AMMB Holdings Berhad	2014q1	3.079614	1.01	4.85	0.62	0.16	11.80	3.834926
AMMB Holdings Berhad	2014q2	3.074543	1.58	4.79	0.63	0.37	11.73	3.594019
AMMB Holdings Berhad	2014q3	3.019937	1.40	4.77	0.58	0.40	11.73	3.811982
AMMB Holdings Berhad	2014q4	2.99773	1.27	4.66	0.64	0.21	11.78	3.840742
AMMB Holdings Berhad	2015q1	2.946017	1.19	4.65	0.58	-0.08	11.80	3.903991
AMMB Holdings Berhad	2015q2	2.93492	0.91	4.64	0.59	0.22	11.79	3.84203
AMMB Holdings Berhad	2015q3	2.698	0.80	4.53	0.67	-0.02	11.80	4.175156
AMMB Holdings Berhad	2015q4	2.631889	0.75	4.55	0.59	-0.16	11.82	3.900153
AMMB Holdings Berhad	2016q1	2.587012	0.77	4.40	0.66	-0.18	11.80	4.001864

AMMB Holdings Berhad	2016q2	2.586259	1.36	4.40	0.52	-0.12	11.77	3.818152
AMMB Holdings Berhad	2016q3	2.547881	0.95	4.42	0.49	-0.14	11.73	3.652734
AMMB Holdings Berhad	2016q4	2.540814	0.79	4.43	0.43	-0.18	11.77	3.793915
AMMB Holdings Berhad	2017q1	2.629007	0.86	4.19	0.62	-0.21	11.81	3.618457
AMMB Holdings Berhad	2017q2	2.745346	0.49	4.16	0.63	0.09	11.82	3.478467
AMMB Holdings Berhad	2017q3	2.609334	0.50	4.13	0.63	-0.05	11.81	3.413126
AMMB Holdings Berhad	2017q4	2.552565	0.69	4.09	0.57	0.12	11.87	3.48124
AMMB Holdings Berhad	2018q1	2.553344	0.66	4.05	0.53	0	11.83	3.977061
AMMB Holdings Berhad	2018q2	2.415914	0.71	4.34	0.57	0.06	11.88	3.859677
AMMB Holdings Berhad	2018q3	2.505526	0.62	4.38	0.54	0.20	11.91	3.632574
AMMB Holdings Berhad	2018q4	2.517696	0.67	4.41	0.48	0.10	11.95	4.17007
AMMB Holdings Berhad	2019q1	2.604909	0.64	4.38	0.47	-0.30	11.98	3.807995
AMMB Holdings Berhad	2019q2	2.5749	0.84	4.22	0.51	-0.05	11.96	3.848231
AMMB Holdings Berhad	2019q3	2.531313	0.66	4.23	0.57	0.12	11.94	3.93847
AMMB Holdings Berhad	2019q4	2.475698	0.74	4.16	0.54	0.16	11.97	3.679334
AMMB Holdings Berhad	2020q1	2.341806	0.67	4.23	0.55	0.31	12.04	4.722864
AMMB Holdings Berhad	2020q2	2.225704	0.47	4.26	0.51	0.17	12.00	4.522766
AMMB Holdings Berhad	2020q3	2.177022	0.35	4.57	0.45	0.75	12.00	4.346917
AMMB Holdings Berhad	2020q4	2.284421	0.06	4.58	0.55	0.81	12.06	4.398638